

REMARKS

The present application currently has Claims 1 through 25 pending. By the office action of May 29, 2003 Claims 1 through 25 were rejected. By the present amendment, Claim 22 has been amended. The Applicant respectfully requests reconsideration of the Claims 1 through 25 as amended.

Office Action Paragraph 1:

The Examiner rejected Claims 1-25 under 35 USC 103(a) as being unpatentable over Bridger et al. US Patent 6,272,209 (Bridger), in view of Burnett et al. US Patent 6,067,030 (Burnett) further in view of Kleffner US Patent 5,734,711 (Kleffner) and Fishman US Patent 5,017,799 (Fishman). The Applicant respectfully traverses these rejections.

The Applicant submits that there is no teaching in the references, individually or in combination, which would suggest to one skilled in the art that their teachings would desirably be combined to provide the teaching of the present Application. In addition, the Applicant submits that there is no combination of the cited references which would correspond to or make obvious the presently claimed invention.

The present invention is an improvement of, or addition to, a customer premises integrated services hub, ISH. This ISH provides telephony services to customer premises telephone receivers by connecting them to a wide area network. It does not provide connections to POTS, plain old telephone service. Since POTS is not available, the ISH must be provided with electrical power to operate. Under normal circumstances, this power is provided by a power supply in the ISH which is connected to the standard AC power circuit in the customer premises. Since that connection or circuit may fail for various reasons, a backup power supply, e.g. a battery, is included in the ISH to provide power during AC power failure. However, the backup supply has a limited amount of power and therefore can provide power for the ISH for only a limited time. The present invention is directed to a system for notifying the customer using a telephone at the customer premises when AC power has failed, so that the customer can reduce his usage to conserve battery power, and take action to restore AC power, which may be as simple as plugging in a cord which has been accidentally unplugged or resetting a circuit breaker. In similar fashion, the present invention is directed to notifying the user in the event that the wide area network connection has been lost.

The references cited by the Examiner are directed to different types of telephone systems and/or solutions to different types of problems.

Bridger is directed to customer premises equipment, CPE, which is similar to the ISH. It does connect customer premises telephone receivers to central office, CO, equipment. However, it is a dual system, having two different connections to the CO. It has both a POTS connection and a DSL connection. The DSL portion of the system must be connected to a power supply in the customer premises equipment. The POTS service is powered from the local office through the local loops, i.e. the wire pairs extending from the CO to the customer premises, and does not need a power source from or in the customer premises. The POTS connection is considered a backup to the preferred DSL connection and is used only when the AC power at the customer premises fails. In the Bridger system, the DSL portion of the system is powered by a power supply in the customer premises equipment connected to the AC circuit in the customer premises. However, Bridger does not provide a backup power system, e.g. battery, in the event that the AC power circuit fails. Instead, the Bridger system simply connects the customer premises telephone lines, or at least one of them, directly to the local loop and therefore to the POTS service, which provides its own power over the local loop to the telephone receivers, but not enough power to operate the DSL circuits.

As noted above, the present invention is part of a different type of customer premises equipment, which does not have or rely on POTS service for backup. In practice, the local telephone companies do not want to provide the equipment needed for POTS service to be used only as a backup service. The present invention is directed to the practical system where backup power must be provided at the customer premises in case of loss of AC power at the customer premises.

Burnett on the other hand provides a computer and program for emergency management of information concerning backup power at a central office, CO. The main relationship it has to customer premises equipment is that customers receiving POTS service from the CO receive power through the local loop wires from the CO to operate their telephone receivers, e.g. to provide ring current. While Burnett includes a detector for loss of commercial power, it provides this information, and much more information concerning battery status, fuel reserves, etc. to the professional technicians, that is telephone company employees, who need to keep the central office operating. Burnett distributes this information over the internet, not through telephone

lines to a telephone receiver. Burnett does not suggest what actions are to be taken by the technicians, but is instead directed to collecting and disseminating detailed information which advises the technicians as to the time left before the CO fails. It may be assumed that the technicians would notify the power company and attempt to have commercial power restored and would locate and deliver additional fuel to the backup generators to keep them operating.

The present invention has nothing to do with loss of power at the CO or conservation of reserve power at the CO. The present invention is an improvement to customer premises equipment which is powered by AC power circuits at the customer premises, and if those fail, by backup batteries in the customer premises equipment itself. The present invention sends a signal to the customer through the telephone receiver itself and allows the individual customer to curtail usage and take action to restore AC power at the customer premises.

Kleffner relates to yet another class of telephone equipment. It is an addition to a type of customer premises equipment. But the equipment is a large industrial system serving a large industrial site. This is clear from the fact that it claims an annual power saving of 2,000 Kwh, by the fact that it depends on badge readers to determine when employees are on site and need telephone service, and by the fact that it discusses powering down the system on weekends. The Kleffner system as disclosed does not have backup power, e.g. batteries. Kleffner does not discuss what happens if the AC power mains fail to provide power. Instead Kleffner simply provides a system for turning power off, or at least reducing power, for telephone receivers during times when the equipment is not being used. Kleffner is not concerned with providing power for telephone service when AC main power has failed.

In contrast, the present invention is concerned with providing telephone service for as long as possible after the AC power circuit has failed. In particular, it provides notification to the individual users of the system so that they may curtail usage to conserve power and/or take action to restore or reconnect the AC power.

Fishman teaches a power supply for a telecommunications device together with a control system for automatically shedding loads. The power supply has a limited current output which is not sufficient to power all supplied devices if they all are switched into their highest power consumption state, e.g. off hook. Fishman teaches three different automatic systems for sensing when power demand exceeds power available and for effectively turning off some of the devices so that the total power demand on the supply does not exceed the power capacity of the

supply. Fishman teaches only the automatic reduction in demand, i.e. load shedding, to avoid overloading a power supply.

The Examiner seems to characterize Fishman as teaching the connection of line cards to a local power supply, presumably to avoid overloading a main power supply. However, Fishman teaches only one power supply and provides no teaching about a local power supply or back up battery. As shown in Fig. 1 of Fishman, the connections which Fishman labels as battery feeds are nothing more than the connections from the main power supply 107 to the devices. The battery feeds 116 include means for automatically limiting the current to the devices as part of the automatic load shedding method taught by Fishman.

The present invention has nothing to do with automatic load shedding under any operating conditions. The closest concept to load shedding in the present invention is the suggestion that a user may curtail his use of the telephone when he is notified that the main power supply has failed and the system is operating on the backup battery. There is nothing automatic about this concept. It would be entirely up to the user to take such a step. The present invention is directed toward providing a signal on the telephone so that the user knows that the system is operating on back up batteries.

The applicant submits the four references are directed to such distinctly different types of telephone systems and problems, that there would be no suggestion in them, individually or in combination, to combine them. For example, Bridger provides a simple solution to loss of AC power in customer premises equipment without a backup battery, but which does have an alternate telephone connection to POTS service. Since it can operate indefinitely on POTS service, it does not need to notify the customer, and the DSL service will automatically reconnect when AC power is restored. There is no suggestion to combine this with a system like Burnett, which provides detailed information over the internet concerning backup power in a CO. Bridger has no backup power system about which information could be provided to anyone. Likewise, Kleffner has no backup power system and does not address the issue of what happens if AC power is lost. Instead, Kleffner intentionally turns power off to telephones which are not being used at night, weekends or when the employee is not at the office. Since Bridger and Burnett are concerned with maintaining service to telephones at all time, there is no reason to consider combining them with Kleffner. Fishman has nothing to do with loss of the AC power source or conservation of backup power batteries. Fishman automatically reduces load on a

main power supply which is operating at its standard conditions to avoid overloading if too many devices attempt to go to a high power state at the same time. There is no reason to consider combining Fishman even with the Kleffner reference in which Fishman was cited, because Kleffner teaches turning off devices when they are not being used in order to reduce the total power consumption and save money. Kleffner does not suggest in any way that devices should be turned off to avoid overloading the main power supply, which obviously has sufficient capacity to supply power to all devices connected to it.

If a reason or motivation could be found for combining the references, the combination would not be the same as, or make obvious, the present invention. The Bridger system would provide a backup by switching to POTS service. Burnett would notify technicians over a computer link of the status of backup power systems. No combination of these notifies a customer when its customer premises equipment has lost AC power and is operating on backup batteries. The teaching of Kleffner merely adds the teaching that portions of a telephone system may be powered down to reduce use of standard AC power, not backup power, but does not provide backup power or suggest notifying users. Fishman teaches automatic load shedding which is not part of the present invention.

With specific reference to Claims 10 and 18, it can be seen that the present invention is quite different from any obvious combination of the cited references. Various references do show SLIC and SLAC circuits, which are standard components of a telephone system. However, no combination of the references provides a customer premises integrated services hub which detects both a loss of AC power and an off hook condition in a telephone line, and automatically notifies a user, i.e. a customer, by placing a warning signal on the telephone line indicating that the AC power has been lost, which also indicates that the system is operating on the back up battery.

With specific reference to Claims 14 and 22, it can be seen that the present invention is quite different from any obvious combination of the cited references. Various references do show SLIC and SLAC circuits, which are standard components of a telephone system. However, no combination of the references provides a customer premises integrated services hub which detects both a loss of a wide area network connection and an off hook condition in a telephone line, and automatically notifies a user, i.e. a customer, by placing a warning signal on the telephone line indicating that the wide area network connection has been lost.

In view of the above described differences from the cited prior art, the Applicant submits that Claims 10, 14, 18 and 22 are allowable over the cited references. Since Claims 11-13, 15-17, 19-21, and 23-25 depend from Claims 10, 14, 18 and 22, the Applicant submits that Claims 11-13, 15-17, 19-21, and 23-25 are also allowable over the cited references.

The Examiner has also rejected the method claims 1-9 on the same basis as the apparatus Claims 10-25. Since the apparatus Claims 10-25 have been shown to be allowable over the cited references, Applicant submits that Claims 1-9 are also allowable over the cited references.

Office Action Paragraph 2:

The Examiner rejected Claims 1-25 under 35 USC 103(a) as being unpatentable over Bridger et al. US Patent 6,272,209 (Bridger), in view of Burnett et al. US Patent 6,067,030 (Burnett) further in view of Kleffner US Patent 5,734,711 (Kleffner) and Phillips US Patent 6,351,534 (Phillips). The Applicant respectfully traverses these rejections.

The rejections in this Paragraph 2 are the same as in paragraph 1, except for the substitution of Phillips for Fishman. As a result, discussion of the differences between the cited references and the claimed invention will be limited to the teachings of Phillips.

Phillips teaches a single line interface circuit, SLIC, with an adjustable output voltage to limit power dissipated, i.e. wasted, in supplying power from the SLIC to a telephone. Since telephones are in the customer premises and the SLICs in the Phillips system are in the Central Office, the length of the local loops depends on the distance between the CO and the customer premises. The resistance of the loops is directly related to the distance. The voltage needed at the SLIC to provide sufficient current to the customer premises is therefore directly related to the distance. If the voltage for all local loops is high enough for the most distant customer, then it is higher than is needed for all the other customers, and the difference results in wasted power. Phillips first groups the local loops into groups which are within more narrow distance ranges. Then Phillips uses an efficient switching regulator power supply to adjust the battery voltage down to the voltage needed for each group, resulting in less wasted power.

The Examiner seems to characterize Phillips as teaching the connection of line cards to a local power supply. However, Fishman teaches only one power supply and provides no teaching about a local power supply or back up battery. Phillips teaches nothing of relevance to the present invention and nothing which could be combined with the other references to achieve any

structure or function related to the present invention. Phillips only power supply is a battery in the central office. The SLICs adjust this voltage to provide power for POTS to a customer premises over the local loops. The present invention involves DSL systems which receive no power from the central office over the local loops. The present invention involves customer premises equipment having its own power supply operating from AC power at the customer premises and a back up battery in the customer premises equipment.

All of the remarks made above with respect to the combination of references including Fishman apply equally to the combination of references including Phillips.

In view of the above described differences from the cited prior art, the Applicant submits that Claims 10, 14, 18 and 22 are allowable over the cited references. Since Claims 11-13, 15-17, 19-21, and 23-25 depend from Claims 10, 14, 18 and 22, the Applicant submits that Claims 11-13, 15-17, 19-21, and 23-25 are also allowable over the cited references.

The Examiner has also rejected the method claims 1-9 on the same basis as the apparatus Claims 10-25. Since the apparatus Claims 10-25 have been shown to be allowable over the cited references, Applicant submits that Claims 1-9 are also allowable over the cited references.

Applicant respectfully requests allowance of Claim 1 through 25 as amended.

If the Examiner believes it would assist in expediting the application, Applicant would welcome a telephone conference with the Examiner to improve understanding of and resolve any remaining issues.


The Commissioner is hereby authorized to charge payment of any further fees associated with any of the foregoing papers submitted herewith, or to credit any overpayment thereof, to Deposit Account No. 21-0765, Sprint.

Respectfully submitted,

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